

whitish line, broadening at apex and inner angle; fringe dark with white spots at ends of the veins. Secondaries dark brown; the costal margin whitish crossed by three brown lines. Expanse 30 mm.

*Habitat*: Castro, Parana.

**Hydrias varona**, sp. nov.

♀ Body dull grayish brown. Wings dull grayish brown, the veins slightly olivaceous. Primaries a broad median paler shade on costa, rather indistinct; a subterminal wavy paler shade. Expanse 50 mm.

*Habitat*: Castro, Parana. Somewhat like the species of *Titya*.

## NEW AMERICAN TINEINA.

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In the present unsatisfactory state of our knowledge of American Tineina it is of little value (or worse) to describe promiscuously new species from collected material, difficult of subsequent recognition. No one is any the better off because he learns that such and such a new species of *Gelechia* or *Lithocolletis* has been taken in such and such a locality. Only when working up a group, either faunistic, or preferably systematic, does it seem to me excusable at present to describe more species, which are known from the type specimen only. Exceptions may be made in the case of new generic forms or especially striking or otherwise interesting species. I believe anyone will endorse this view who has tried to grope through Chambers' flood of descriptions, many of which represent only valueless names, a dead weight on our lists, and which will not for a long time, if ever again, be connected with the species they represent. But as it will take years before the American Tineina fauna can be worked up systematically by groups, which is the end for which we should strive, it does not seem desirable in the meanwhile to withhold from publication new forms, of which the life history has been ascertained and which are of such interest as to be of some positive gain to our knowledge.

And here I might point out an opportunity for any student, who has not the facilities or the desire to do systematic work, but who still

has time and desire to add truly valuable contributions to science—namely the working out of life histories of these charming little wonders. The opportunity is open to anyone who has eyes to see and leisure time to spare in fields and woods.

I will be glad to determine any bred material sent to me and to assist with any other information on the subject, within my reach.

That there is enough to do for many observers is shown by the fact that of the 1,200 species, described from this country, the life histories of only a small percentage are known, and that in the District of Columbia, where comparatively much collecting has been done, on an average every tenth specimen collected during the last three years represents an undescribed species.

The following are a few species only out of a large collection of bred material on hand, the notes on which I hope from time to time to get in shape for publication.

I am indebted to Dr. Edw. Meyrick, of England, for notes on the new genera, characterized in this paper. I sent him material of these supposed new genera, and he has kindly informed me, that he is not acquainted with any such generic forms from Europe or Australia.

#### GELECHIIDÆ.

##### ***Polyhymno acaciella***, sp. nov. (Plate IX, Fig. 1.)

Antennæ dark mouse gray, white at base. Labial palpi whitish above, dark gray below (that is in front). Face and head white. Thorax white with four longitudinal dark mouse-brown stripes. Fore wings elongate, caudate, dark mouse brown; in the middle of the wing from base to beyond end of cell a broad spindle-shaped longitudinal white band; between this and the dorsal edge is a short white longitudinal streak beginning about the middle of the wing and becoming narrower and fainter outwards, losing itself in the dorsal ciliæ. At the end of the central white band are three white streaks, one below and two above, converging towards a common point just before apex, in the costal cilia are three short nearly perpendicular streaks converging towards the same point, which is of a somewhat lighter yellowish gray color, than the rest of the wing. Apical cilia white with black tips and a transverse dark streak above the produced tips of the wing, while below it is white with gray tips and two very distinct deep black round dots one above the other at base. Dorsal cilia light yellowish gray. Hind wing dark gray; cilia with a golden sheen; abdomen dark gray, anal tuft yellowish. Alar expanse 12.5-14 mm.

*Habitat:* Texas.

U. S. National Museum, type no. 5353.

Co-type in Lord Walsingham's collection.

Described from six specimens reared by Mr. Th. Pergande from *Acacia farnesiana*.

The larva, which is very dark, nearly black, with black head, was found by Mr. E. A. Schwarz to web up and feed between the leaves of the above tree in the streets of San Diego, Texas.

The moth, while easily distinguished from the smaller lighter golden type of the genus *lutcostrigella* Cham., is still very close to it in general appearance and in habit.

The food plant of *P. lutcostrigella* Cham. is *Cassia chamaecrista*, on which the larva, which is difficult to detect, spins together the leaflets. I have reared this species repeatedly in the District of Columbia in late July and early August.

The only other described species of this genus from the American continent is *P. sexstrigella* Cham. A much smaller species, diverging considerably from the two others in coloration, but agreeing well generically. Lord Walsingham's three West Indian species are evidently quite distinct from any of the continental forms. Judging from the description and figure, *acaciella* Busck seems to resemble most *Polyhymno cleodorella* Walsingham, described from Africa.

Neither Chambers' nor Walsingham's delineation of the wing of *lutcostrigella* (Journ. Cin. Soc. Nat. Hist., Vol. II, 1880, Plate III, Fig. 26, and Trans. Ent. Soc. Lond., 1891, Plate VII, Fig. 78) is very good, and gives no true idea of this elegant form. Chambers' venation is wrong, even with his MS. correction, published by Mr. Beutenmüller, and Walsingham's figure does not show the caudate apex sufficiently. Fig. 1, Plate IX, is drawn from *P. acaciella*, but is identical in venation and form with the wing of *P. lutcostrigella* Cham.

#### CECOPHORIDÆ.

##### **Triclonella**, gen. nov.

Antennæ four-fifths, slightly serrate and ciliate, basal rather long but simple with pecten. Labial palpi long, smooth, recurved; second joint somewhat thickened with appressed scales, terminal joint long, but shorter than second. Maxillary palpi obsolete. Face, head and thorax smooth. Fore wings elongate ovate, pointed; 12 veins, 7 and 8 stalked, rest separate. Hind wings under I; costa depressed from middle to apex, anal angle rounded; 8 veins, 6 and 7 parallel, 3 and 4 stalked, 5 out of the stalk of 3 and 4. Posterior tibiæ hairy above.

Type: *T. pergandeella* Busck.

**Tricolonella pergandeella**, sp. nov. (Plate IX, Fig. 2.)

Antennæ purplish black, with two silvery white, thin, longitudinal lines from base to tip. Labial palpi black, second joint with four longitudinal thin silvery white lines, terminal with one longitudinal white line in front. Tongue thinly scaled, white. Face and head brownish black with a thin white line over the eyes. Thorax clear light golden brown concolorous with basal part of fore wings. Abdomen purplish black. Fore wings, basal half light yellow brown with a small black, white-edged dot on the middle of the cell. The brown color extends along the costa into the apical half of the wing, the ground color of which is purplish black, edged towards the brown part by a thin white line. In the black part of the wing are scattered sparse white scales segregating into a whitish spot near tornus; basal part of cilia black sprinkled with white scales, tips of cilia mouse gray. Hind wings purplish gray, darker towards the tip; cilia brownish. The venation of the hind wing shows more variation than is generally found within a species. White veins 3 and 4 are always stalked and 5 always out of this stalk, the relative length of the branches and the stalk is very variable. Legs purplish black, coxæ sprinkled with silvery scales; hind tibiæ with one broad silvery annulation and with the outer spurs silvery white, inner spurs black; tarsi with indistinct silvery annulations. Alar expanse 14 mm.

*Habitat*: District of Columbia.

U. S. National Museum, type no. 5354. Cotypes in the collections of Dr. Meyrick, and Lord Walsingham, England, Dr. Dietz, Miss Murtfeldt and Professor Fernald. Described from many bred specimens. The larva feeds on the common tick-trefoil, *Meibomia (Desmodium) dillenii*.

The eggs are laid singly on the underside of a leaflet and the larva lives in a roomy inclosure between two leaflets spun together. When full grown it is about 12 mm. long, cylindrical, slightly depressed and tapering fore and back. Legs normal; head is yellow with a black spot over the eye and one on top; body black marked with yellow as follows: Anterior half of first thoracic joint; a continuous dorsal spot and two lateral spots on second and third thoracic segments; two small dorsal dots on segments 5, 6 and 7 (counting head as first joint); joints 8 and 9 have the same two dorsal spots larger and more conspicuous besides two lateral spots, one on each side. End of body all black; entire body clothed with rather short sparse white hairs.

Dr. Dyar has given me the following description:

“Head rounded, elongate, the lobes full; clypeus high, the paraclypeal pieces narrowly reaching the vertical triangle; labrum longer than wide, projecting, emarginate; surface shagreened; setæ pale, some long, others short; pale luteous, a black patch at top of lobe next suture, and a broad blotch on the lower angle of cheek behind ocelli; ocelli weak, in a black patch; antennæ moderate, pale. Thoracic feet large; abdominal ones small, slender, normal, the crochets in a complete small circle, smaller and almost broken on the outer side; in a single row on the

anal feet, the posterior half of the circle being obsolete. Cervical shield rectangular, the posterior angles rounded, bisected on dorsal line, complete as to its setæ; not strongly cornified, pale, a large black patch on posterior lateral angle and a small one on anterior angle. Tubercles normal, distinct, brown-black, with rather long pale setæ. On thorax ia and ib well separated, iia + iib, iv + v; on abdomen, i dorsad to ii, iv and v in line, remote, vi normal, vii of three setæ in a nearly straight line on a common elongate tubercle, viii normal. Feet surrounded by black, chitinous ring-shields. Skin smooth, blackish; a pale yellowish patch about tubercle i, large on joints 3, 4, 8 and 9, small on the others, absent on 11; a lateral patch about tubercle iii, large on joints 2, 3, 4, 8, 9 and 12, small on the others; smaller patches about iv and v and before vi on joints 3, 4, 8, 9 and 12. Anal flap blackish, paler centrally, not cornified."—Harrison G. Dyar.

When younger, the larva is of a much lighter appearance, the yellow predominating. It is very agile and runs quickly forwards or backwards and lets itself fall on a silken thread, if the leaves are not carefully handled. When ready to pupate it enlarges its cell by adding the third leaflet, and suspended by a slight web a thin white half-transparent oval cocoon is spun inside the cell, in which the larva transforms to a rather robust light brown pupa.

There are two or three overlapping generations yearly in this locality, the moth issuing late in June and late in August and sometimes again late in September.

The species over-winter as imago. The imago is very retired in its habits and is not taken at light.

I believe this species is very local; I have reared the moth in numbers for three successive years, but all taken within a limited area on the eastern side of the eastern branch of the Potomac River. Although the food-plant is common everywhere I have, though diligently seeking, never found it elsewhere, not even in other parts of the District of Columbia apparently similar in nature. I have not seen a single specimen in any of the collections except those reared by myself. Neither had Miss Murtfeldt, Dr. Dietz or Professor Fernald ever met with it, and such a conspicuously marked insect would be likely to be remembered if once met with.

I have named this, the first Tineid I ever reared, in honor of my friend and teacher Mr. Th. Pergande, under whose guidance I have had the good fortune to be initiated into the closer study of insect life in the field and in the insectary.

#### **Tricolonella villella**, sp. nov.

Labial palpi light yellowish brown, blackish on the outside. Face, head, thorax and anterior wings unicolorous light yellowish brown, the same shade as in *pergan-*

*decella*, without markings of any kind. Posterior wings shining yellowish fuscous, cilia golden brown. Legs yellowish brown, tarsi on the outside blackish. Alar expanse 15 mm.

U. S. National Museum, type no. 5355.

Described from a single female reared by Mr. Pergande accidentally from *Xolisma* (*Andromeda*) *ligustrina*, collected at Cabin John, Md., for another purpose.

Larva not observed and food-plant therefore not absolutely certain. The species has somewhat narrower fore wings than the type of the genus but agrees in all respects with the generic description and is clearly closely related to *pergandecella*.

**Euclemensia schwarziella**, sp. nov. (Plate IX, Fig. 3.)

Antennæ bluish metallic black. Labial palpi light silvery strawcolored with tips darker. Head and thorax deep bluish metallic black. Fore wing bluish black with strong metallic reflections. At basal third is a transverse irregular fingered bright red or golden fascia, narrow in the middle, broadening out in one outwards and two inwards lobes or fingers at costal and dorsal edge. At the middle of the wing on costal edge are a few silvery white scales; at the beginning of the costal cilia is a large white dash, edged below by a red spot, and at the beginning of the dorsal cilia is another white spot, edged above with red. The shade of the red on the wing varies in different specimens, as is the case in *E. bassettella* Clem, from a nearly golden yellow to a rich deep red. Hind wing purplish black. Abdomen bluish metallic black; legs metallic black; hind tibiæ with two silvery annulations, one at the middle and one at the end, and with spurs silvery white. Alar expanse 11-12 mm.

*Habitat*: Santa Rita Mountains, Arizona.

U. S. National Museum, type no. 5356.

Described from six specimens, collected by Mr. E. A. Schwarz and reared from a kermes species on oak sent by him. The moth issued in June through a sharply cut circular hole, the lid of which still adheres to the kermes.

This species has the same colors as, but a very distinct pattern from the common *E. bassettella* Clem. The generic characters are identical.

I name this beautiful species in honor of the collector, who has added many new and interesting species to the material in the U. S. National Museum.

ELACHISTIDÆ.

**Scelorthus**, gen nov.

Antennæ simple, nearly as long as fore wing. Labial palpi porrected, short, smooth, pointed. Maxillary palpi obsolete. Tongue long, naked, spiraled. Head

smooth. Fore wings narrow, slender, lanceolate, pointed, smooth; costa somewhat depressed at middle of wing. 10 veins, 4 and 8 absent, all separate, 7 to costa, 1<sup>b</sup> forked at base. Hind wings under 1, lanceolate, 6 veins, 3 and 4 absent, cell open, 5 and 6 stalked from independent stem, 7 independent. Hind tibiæ smooth with two groups of long, stiff bristles above the spurs, one at the middle, the other at the end. At rest the hind legs are stretched upwards above the wings.

Type: *S. pisoniella* Busck.

This genus resembles very much *Lithariapteryx*, Chambers (Can. Ent., Vol. VIII, p. 217, 1876), in head, wing form, venation and general habitus; but it is distinguished at once by the two groups of bristles on posterior tibiæ and differs also in the forewing by having vein 1b distinctly and greatly furcate at base while in the hindwing the submedian vein is simple.

**Scelorthus pisoniella**, sp. nov. (Plate IX, Fig. 4.)

Antennæ metallic black. Labial palpi purplish white. Face silvery. Head and thorax shining greenish aureous. Fore wing purplish gray with blue and silvery reflections. At base is a dorsal aureous patch and at the middle of the wing is a narrow transverse aureous fascia; at basal fourth is a small black costal dot, surrounded by metallic purple scales. Cilia dark ashy gray. Hind wings silvery gray becoming darker outwards towards the top where they are shining purplish black. Cilia with a golden sheen. Abdomen above metallic purplish black, below silvery white. Sides of thorax below the wings golden. All coxæ silvery white, tibiæ and tarsi purple; spurs and spines on hind tibiæ black. Alar expanse 8.5 mm.

*Habitat*: Palm Beach, Florida.

U. S. National Museum, type no. 5357. Cotype in collection of Dr. Meyrick, England.

Described from four specimens, bred in February from *Pisonia obtusata*, collected by Dr. Harrison G. Dyar.

The moth is a shining, elegant little form, related to and reminding one of *Heliodines*. The following are Dr. Dyar's notes on the larva:

"The larva lives on the leaves of *Pisonia obtusata*, at first mining between the upper and lower epidermes, later eating little patches on the back of the leaf through to the upper epidermis from a position in a central white web, covered by a lump of frass which adheres to the web. In one instance the larvæ were found on *Pisonia aculeata* with the same habits.

"Slender, moniliform, joint 13 narrower; transparent whitish-green, tubercles represented by tiny black dots. Head flattish, the clypeus high, nearly touching the vertical triangle; whitish, ocelli black, mouth pale brown. Tubercles i and ii are in

line, i, a trace dorsad; iv and v separate, iv dorsad; vi on the lower subventral fold. Feet short, slender, the abdominal ones on joints 7 to 10 and 13. Dorsal vessel slightly darker than the rest of the body; ♂ glands colorless. Later darkish green, the dorsal tubercles purplish-black. On the thorax tubercles 1a and 1b are separate, 1a small; one tubercle representing ii, one representing iv + v, but only one hair seen on each distinctly, the other minute. Pupa in the web, flat and wing-margined, green with diffuse brown-black dorsal stripe on the abdomen."—(Harrison G. Dyar.)

### **Lamprolophus**, gen. nov.

Antennæ  $\frac{3}{4}$  slightly serrate. Labial palpi very short, straight, pointed, drooping. Maxillary palpi obsolete. Tongue long, naked, spiraled. Fore wing elongate, ovate pointed, apex produced and deflexed, termen sinuate; with raised scale tufts; 11 veins, 8 absent, all separate, 7 to costa, 1b simple. Hind wing lanceolate, 7 veins, 4 absent, cell open, 6 and 7 stalked, 5 from independent indistinct stem 2 and 3 stalked. Posterior tibiæ with a row of short stiff hairs above.

Type: *L. lithella* Busck.

### **Lamprolophus lithella**, sp. nov. (Plate IX, Fig. 5.)

Antennæ dark metallic purple. Labial palpi golden yellowish. Face, head and thorax shining black with strong metallic green and purple reflections. Fore wing, ground color deep metallic purple with strong golden reflections, on the middle half of the wing are four equidistant costal raised scale tufts and intermediate between these are three dorsal scale tufts all strongly metallic silvery or golden bluish. At the base is a dorsal golden yellow patch; just before the last two scale tufts are a costal and a dorsal golden yellow spot and in the apical part of the wing are two parallel longitudinal golden yellow streaks. Cilia purplish gray.

The golden reflections of the wing make a realization of the true colors difficult; in some lights the wing looks all golden, in others all silvery bluish. Hind wing silvery at base and along costa, outer half purplish black; cilia dark purple. Abdomen dark metallic purple above, below light golden or silvery according to the light. Legs golden purple with a narrow white bar at the end of the posterior tibiæ and with all spurs light silvery. Alar expanse 9 mm.

*Habitat*: Palm Beach, Florida.

U. S. National Museum, type no. 5358. Co-types in the collection of Dr. Meyrick, England. Described from four specimens bred in February from *Pisonia aculeata*. The following are Dr. Dyar's notes on the larva:

"The larva bores in the young stems of *Pisonia aculeata*. It spins a slight web above the base of a young leaf and enters the stem, leaving a round hole from which the frass is ejected.

"Cylindrical, the segments short and rather thick, faintly 2-annulate. Translucent sordid whitish, no marks. Tracheal line white; ♂ glands dark ochreous. Tubercles small, brown-black, i and ii nearly in line, iv and v approximate but distinct, iv slightly dorsad, iii, vi and vii normal. Feet small, pale except the anal pair which are



broadly black ringed. Anal plate large, black; also extensive black plates on joint 12, single for tubercle i and tubercle ii, paired including tubercles iii to v and the spiracle; joint 12 is small and hunched up, 13 still smaller, scarcely divided by a suture. Skin slightly shining, minutely granular. Cervical shield elliptical, bisected, black. Head round, free, slightly bilobed, higher than wide, black, shading to brownish below; clypeus high; ocelli black. Tubercles ia and ib are separate on joints 3 and 4."—(Harrison G. Dyar.)

#### HYPONOMEUTIDÆ.

#### *Hemerophila dyari*, sp. nov. (Plate IX, Fig. 9.)

Antennæ nearly three-fourths black with silvery white annulations and with two longitudinal rows of cilia on the underside; length of cilia twice the thickness of the antennæ. Labial palpi moderate, curved ascending; second joint long, slightly rough in front, white with one black annulation; terminal short, thickened, blunt, black, with one ring round the middle and with the extreme tip white. Maxillary palpi obsolete. Tongue well developed, spiraled. Face, head and thorax smooth, very dark olive-green, nearly black, evenly and thickly sprinkled with golden yellow scales. Basal two-fifths of fore wing concolorous with thorax and equally evenly sprinkled with yellow scales. This basal part is sharply edged by a narrow, somewhat undulating, transverse line of bluish white scales, most pronounced on the costal half of the wing. Outside of this line the wing has a very perceptible but not easily defined purplish sheen. The ground color is the same as in the basal part of the wing, but the more thickly sprinkled light scales are of a purplish white color, which dominates this part of the wing and makes it appear much lighter colored than the basal part. Towards the end of the wing the light scales become gradually fewer and nearly golden yellow again as on basal part of the wing, but the bluish cast remains. Just at apex the triangular corner of the wing is so thickly overlaid with golden scales as to appear all gold; this part is separated from the other by a deep black narrow line from costal edge to middle of termen. Along the outer edge of the wing runs a deep black line. Cilia dark purplish fuscous with strong metallic blue reflection. Hind wing dark olive-brown, cilia purplish with golden yellow base. Abdomen above deep bluish black, below with a light golden yellow transverse band on each segment. Legs golden with black annulations. Underside of thorax yellowish white. The underside of the wings dark olive-brown; the apical corner of the fore wing, corresponding to the golden upper part, is golden yellow; along the base of the cilia is a deep black line corresponding to that on the upper side. Alar expanse, 14 mm.

*Habitat*: Palm Beach, Florida.

U. S. National Museum, type no. 5362.

Described from a single bred male in perfect condition, issued in March.

The venation of this species (Plate IX, Fig. 9) is as follows: Fore wing tortricid-shaped, 12 veins, all separate, 2 distant from corner of cell, 3-10 from end of cell, 7 to termen, 8 to costa, 1♂ fur-

cate at base, internal vein from between 11 and 10 to between 8 and 7. Hind wing over I triangular, 8 veins, 3 and 4 short-stalked, 5, 6 and 7 parallel.

I take pleasure in naming this beautiful species after its discoverer, Dr. Harrison G. Dyar.

Only one other species of this genus, *H. (Simathis) vicarialis* Zeller is recorded from North America. This species is unknown to me except from description, but it is evidently entirely different from *H. dyari*.

The breeding of this species from *Ficus* agrees with the known food-habits of other tropical species of the genus as recorded by Meyrick.

The genus *Walsinghamia* Riley is very near to *Hemerophila*, differing principally in the thickened antennæ. It agrees perfectly in wing form and venation. The difference in labial palpi is so slight that it is unfortunate that Professor Fernald has used it as a differential character in the synoptic table of his valuable paper on these and allied genera (Can. Ent., 1900, p. 238). He calls the third segment of the labial palpi in *Walsinghamia* long and pointed, while I should decidedly call it short and blunt, very little longer indeed than in *Hemerophila*. Long and short are relative terms, susceptible of varying interpretation and therefore I think Professor Fernald's table would have been improved by placing *Walsinghamia* under the same number as *Hemerophila* and then using the antennal character to separate.

The common food-plant and peculiar larval habits further confirm the close relationship of these two genera.

The following are Dr. Dyar's notes on the larva:

"The larva lives on the leaves of the rubber banyan tree (*Ficus aurea* and *F. pedunculata*). When small, on the back of a leaf under a delicate silken tent; when large on the upper surface under a similar broad web spun flat on the leaf across the slightly concave upper side. The larva eats holes through to the lower epidermis in a patch about half an inch in diameter under the web. These patches remain even on old leaves, showing the characteristic traces of the larva, though the delicate web is evanescent and disappears almost as soon as the larva quits it. The larvæ are very active, falling to the ground with contortions when disturbed. Each remains in its web only long enough to eat one or two patches, when it proceeds to a new leaf to form a fresh web. They are always solitary at maturity, though sev-

eral may be found in a common web when small and still living on the back of the leaf. Three stages were observed, all similar except in size; widths of head .6, .8, 1.1 mm.'

Head rounded bilobed, clypeus reaching over half way to vertex, mouth projecting; a long dark spinneret; antennæ short, but palpi distinct; lobes and clypeus bulging, labrum distinctly emarginate; green, ocelli black, labrum brown edged, setæ black; width 1.1 mm. Body a little flattened, tapering a little at the anterior end and more so posteriorly; anal feet divergent, projecting, the other abdominal ones short; thoracic feet large, bent at right angles centrally like claws. Segments 3-annulate, the anterior annulet very small. Tubercles small, concolorous, a little elevated; i and ii in line, iv and v united; on the thorax ia and ib united, iia and iib united and iv and v likewise, all normal. Setæ distinct, moderate, pale, but black on the concolorous and invisible cervical shield and anal plate. Green, clear, uniform, the dorsal vessel darker, feet whitish green. The active and sensitive larva spins its delicate web with great rapidity.

Cocoon a mass of moist silky web on the top of a leaf or other suitable place resembling the larval tent, but much larger and containing centrally an imperfect tube with a ribbon of white silk at the top. The pupa is pale green without marks and can wriggle up and down the tubular part of the cocoon, at will.—(Harrison G. Dyar.)

*Food-plants: Ficus, spp.*

#### TINEIDÆ.

#### **Leucoptera smilaciella**, sp. nov. (Plate IX, Fig. 6.)

Antennæ golden white, basal joint enlarged to a considerable eye cap, silvery white. Face smooth, silvery white. Head tufted, silvery white. Labial and maxillary palpi obsolete. Thorax and fore wing silvery white; from middle of costa obliquely outwards reaching to the middle of the wing is a golden yellow streak with parallel dark edges; between this and apex is a triangular golden yellow spot also thinly edged with black; at tornus is a conspicuous deep black spot followed on the outside by somewhat raised bronzy silvery scales, and on the inside and above surrounded by a narrow golden yellow area. Just before apex is a longitudinal short golden yellow streak; apical cilia white with dark fuscous tips and two transverse dark fuscous streaks; dorsal cilia gray. Hind wing dark purplish brown nearly black, cilia a shade lighter. Abdomen dark fuscous above, light silvery fuscous below. Anal tuft white; legs golden white, posterior tibiae hairy. Alar expanse 7.5–8.5 mm.

*Habitat:* District of Columbia, Pennsylvania.

U. S. National Museum, type no. 5359. Co-types in collections of Murtfeldt, Fernald, Dietz, Walsingham and Meyrick. Described from many bred specimens.

*Food-plant: Smilax glauca*, and *S. rotundifolia*.

The eggs, which are laid on the underside of a leaf singly, but

often 2-5 on one leaf, are oval, glistening white and very large in proportion to the moth.

The young larva eats into the leaf, forming a short, narrow, serpentine track, which soon broadens out in a large irregular upper blotchmine, often entirely obliterating the early part of the mine. The mines show reddish brown on the upper side of the leaf and contrast very conspicuously with the dark-green foliage. The black frass is distributed irregularly in the mine, the inside of which is a dirty domicile for such a dainty creature to issue from. The larva is, when full grown, 5.5 mm. long moniliform, somewhat flattened and tapering backwards; first thoracic segments the broadest, nearly twice as wide as the head. Head light brown, body dark, glossy-greenish with two longitudinal black spots on first thoracic segment; and legs normal. Often two to five larvæ are found within a common large mine.

Dr. Dyar has made the following notes:

"Head flattened, subcircular, labrum slightly projecting, clypeus band-shaped but narrowed above, reaching vertex; paraclypeal pieces large, broad, each nearly as broad as the clypeus itself, narrowed above, reaching vertex and reducing each lobe to about one-fourth of the surface of the head. Ocelli obsolete, antennæ rudimentary. Body moniliform, joints 2 and 3 large, 4 and 5 smaller, 6 to 11 larger, 12 and 13 tapering rapidly, 13 elongate, divided. Feet normal, thoracic ones small, abdominal short with a complete, broad ellipse of small, sparse, scarcely recurved crochets; those of joints 7 to 10 and 13 essentially alike. Whitish, no marks, no shields, but a paired blackish patch in joint 2. Tubercles absent, setæ very fine and slender, practically absent except laterally, iv and v in line remote, iv a trace dorsad; only iii and iv are at all well developed. On thorax the subprimaries iii and iv are present."—(Harrison G. Dyar.)

When fully grown the larva quits the mine through a moon-shaped cut in the upper epidermis and spins a beautiful glistening white bridgework, consisting of two parallel broad flat silken bands each about 10 mm. long and 1.5 mm. wide, connected at the middle, under which the spindle-shaped snow-white cocoon proper is made.

Several overlapping generations are found during the summer in this locality, the moth issuing from the middle of June to late in September. The insect over-winters as imago. Besides two Florida species described by the writer only one other species of this genus is described from this country, namely *Leucoptera (Cemiostoma) albella* Chambers, on poplar; but diligent rearing will disclose more undescribed species, as I have taken others at light this summer.

It will be seen from the delineation of the venation (Plate IX,

Fig. 6) that this species differs in some respects in the fore wing from that given by Dr. Meyrick as characteristic of the genus; but the *tout-ensemble* of the insect, the larva and the cocoon is so evidently close to the European forms, that I do not hesitate in placing it in the same genus.

The venation of the present species is: Fore wing, 10 veins, 4 and 8 absent, all separate, 7 to costa, 1b furcate at base. Hindwing: 6 veins, 3 and 4 absent, cell open between veins 2 and 5.

***Tinea oregonella*, sp. nov.** (Plate IX, Fig. 7.)

Antennæ dark fuscous. Labial palpi brownish, both joints tipped with white. Maxillary palpi very short white. Face and head rough, yellowish white. Fore wing rusty white, somewhat variably marked with dark brown, nearly black, longitudinal streaks. The two most conspicuous and constant are one on the fold reaching from the base to the apical third of the wing and one in the middle of the wing, reaching from basal third to apex. At the base of wing is a costal and a dorsal less conspicuous streak and along the edge of the wing is a more or less regular row of dark brown spots; cilia white, dusted with reddish brown. Hind wing dark gray, cilia yellowish. The ground color of the wing varies somewhat in different specimens, being pure dull white in some while in others it is reddish or brownish; and with the exception of the two first-mentioned heavy streaks all the other markings are sometimes nearly effaced, while in other specimens they are emphasized. Also the color of the streaks is somewhat different in different specimens ranging from brown to pure black. Legs white; tarsi with black annulations, tuft on hind tibiæ yellowish. Alar expanse 15-17 mm.

*Habitat*: Oregon.

U. S. National Museum, type no. 5360. Co-types in the collections of Murtfeldt, Fernald, Dietz, Meyrick, Walsingham, and may be obtained for any other collections where they may be desired.

Described from some 300 specimens bred from a large woody Polyporus-like fungus on Redwood, containing about half a cubic foot, collected in Oregon by Dr. H. von Schrenk, and kindly turned over to me by Mr. E. A. Bessey, of the Division of Vegetable Pathology, U. S. Dept. of Agriculture.

When I received the fungus many moths had already issued, more than two hundred, in fact, from an actual count of the protruding empty pupa-skins.

I placed the fungus in a covered glass jar and during the following week (late September) more than six hundred more moths issued. The fungus was a curious sight, looking like a strange hedge-hog, with the closely-set projecting empty pupa-skins sticking forth like spines.

**Eucatagma**, gen. nov.

Antennæ simple, a little more than half as long as fore wing, basal joint with well-developed eye cap. Labial palpi moderate, somewhat curved, porrected, smooth, pointed; maxillary palpi obsolete. Tongue well developed, naked, spiraled. Face and head smooth; fore wings rather broad and short oval, 12 veins all separate, 7 to termen, 1b furcate at base; between vein 11 and the dorsal edge a thickened opaque area. Hind wings I, costa deflexed from middle of wing, 7 veins, 4 absent, all separate. Posterior tibiæ smoothly scaled.

Type: *Eucatagma amyrisella* Busck.

**Eucatagma amyrisella**, sp. nov. (Plate IX, Fig. 8.)

Antennæ light silvery gray. Eyecaps silvery white. Labial palpi silvery gray. Face, head and thorax pure white. Fore wings silvery white, marked with a soft flannel-like gray as follows: Six indistinct equidistant small transverse spots just below costal edge from base to apical third; two large areas on dorsal half of the wing separated by a narrow irregular white line, the first and largest one occupying the middle third of the wing, the other smaller one at tomas; three small transverse spots at apex; cilia brownish with a thin white transverse line. Hind wing silvery gray, apical third darker, cilia lighter silvery. Abdomen white. Legs white with dusky tarsi. Alar expanse 10 mm.

*Habitat*: Palm Beach, Florida.

U. S. National Museum, type no. 5361. Co-type in collection of Meyrick, England. Described from two specimens issued March 12, 1900.

The following are Dr. Dyar's notes on the larva:

"The larva spins a delicate open web among the very young leaves of *Amyris floridana*, not drawing the leaves together or distorting them in any way. It rests on a stem or leaf, not on the web.

"Head .8 mm. wide, slightly bilobed, the lobes full; clypeus high and broad, green, ocelli black, mouth brown. Body slender, cylindrical, not tapering; segments not annulate; feet normal; subventral fold rather prominent. The circle of crochets of feet complete; green, translucent; dorsum heavily darkly shaded from numerous fine dark red mottled lines, becoming more sparse and dotted towards the ends and only faintly traced on joint 2, which looks green. The dorsal ground color appears as about six fine longitudinal irregular lines. Tubercles small, black; i dorsad to ii, iv and v in line, approximate but distinct on the subventral fold; vi distinct; vii on the leg base, a group of three hairs. On joints 3 and 4 tubercles ia and ib are separate, iia and iib united in a large, round, elevated, deep black tubercle. Setae fine, pale. No plates. The pupa is formed in the web and is colored green."—(Harrison G. Dyar.)

*Food-plant*: *Amyris floridana*.

## EXPLANATION OF PLATE IX.

- FIG. 1. Venation of *Polyhymno acaciella* Busck.  
 " 2. " " *Triconella pergandeella* Busck.  
 " 3. " " *Euclemensia schwarziella* Busck.  
 " 4. " " *Scelorthus pisoniella* Busck.  
 " 5. " " *Lampratophus lithella* Busck.  
 " 6. " " *Leucoptera smilaciella* Busck.  
 " 7. " " *Tinea oregonella* Busck.  
 " 8. " " *Eucatagma amyrisella* Busck.  
 " 9. " " *Hemcrophila dyari* Busck.

## IN MEMORIAM: REV. DR. GEORGE D. HULST.\*

BY ARCHIBALD C. WEEKS.

The Rev. Dr. George D. Hulst was stricken with neuralgia of the heart on the morning of November 5, 1900, as he was preparing to visit some sick members of his congregation, and expired almost immediately.

Upon arising in the morning he complained of having suffered much pain during the night, and summoned his family physician, who prescribed a simple remedy and remained at the house until it was obtained, Dr. Hulst meanwhile genially rallying him upon its potency and character, and apparently as buoyant and animated as usual. After the departure of the physician he sat by the window resting his head upon his hands, and as his daughters came through the hall he rose to speak to them. Hardly had he done so than he sank slowly to the floor, death being instantaneous and as surprising as it was unexpected. He had never had what might be termed a sick day, and by his lifelong habits of temperance had retained to a remarkable degree his boyish activity and sprightliness. Only the day before, while conversing with members of his congregation, he had spoken of his excellent health.

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\*An address delivered before the New York Entomological Society, December 4, 1900.